

**AMENDMENTS TO THE CLAIMS**

The following listing of claims replaces all prior versions of the claims in the Application. With reference to the listing it is noted that, herewith, claims 1, 24, 26, 27, 35, 58, 60, and 61 are amended. No new matter has been added.

**Listing of Claims**

1. (Currently Amended) A method for cluster management in a network environment, comprising:

performing, at a first node, with respect to one or more ~~associated~~ first clusters in said network environment, one or more traffic measurements, wherein the first node is a member of said one or more first clusters;

receiving, at the first node from one or more second nodes that are members of one or more second clusters in said network environment, one or more traffic measurements performed by the one or more second nodes with respect to the one or more second clusters ~~from one or more nodes associated with one or more other clusters in said network environment~~;

determining, at the first node in accordance with the one or more traffic measurements performed at the first node and the one or more traffic measurements performed by the one or more second nodes ~~performed traffic measurements and the received traffic measurements~~, one or more reclustering operations to be performed in said network environment; and

dispatching, from the first node, data to realize said reclustering.

2. (Original) The method of claim 1, wherein said network environment is a peer-to-peer

environment.

3. (Original) The method of claim 1, wherein said reclustering operations comprise creation of a new cluster.

4. (Original) The method of claim 1, wherein said reclustering operations comprise elimination of one of said clusters.

5. (Original) The method of claim 1, wherein said reclustering operations comprise transfer of one or more of said nodes among between one or more of said clusters.

6. (Original) The method of claim 1, wherein said traffic measurements are constantly taken.

7. (Original) The method of claim 1, wherein said traffic measurements are taken in response to a request for said measurements.

8. (Original) The method of claim 7, wherein said measurements are taken for a specified period of time.

9. (Original) The method of claim 1, wherein said traffic measurements comprise measurements corresponding to node index updates.

10. (Original) The method of claim 1, wherein said traffic measurements comprise measurements

corresponding to entity index updates.

11. (Original) The method of claim 1, wherein said traffic measurements comprise measurements corresponding to entity queries.

12. (Previously Presented) The method of claim 1, wherein determining comprises determination of traffic-optimizing cluster size.

13. (Previously Presented) The method of claim 1, wherein a new cluster is created in response to entity index traffic measurements rising above a specified level or entity query traffic measurements falling below a specified level.

14. (Previously Presented) The method of claim 1, wherein one of said clusters is eliminated in response to entity index traffic measurements falling below a specified level or entity query traffic measurements rising above a specified level.

15. (Original) A method for cluster management in a network environment, comprising:

receiving a request from a node to change affiliation with said network environment;

determining if the affiliation change would result in an integer-squared number of nodes being affiliated with said environment; and

dispatching data to realize reclustering in said environment in the case where said determining yields an affirmative result.

16. (Original) The method of claim 15, wherein said network environment is a peer-to-peer environment.

17. (Original) The method of claim 15, wherein it is determined if the affiliation change would result in said integer-squared number of nodes being registered in said network environment.

18. (Original) The method of claim 15, wherein it is determined if the affiliation change would result in said integer-squared number of nodes being active in said network environment.

19. (Original) The method of claim 15, wherein the affiliation change is registration.

20. (Original) The method of claim 15, wherein the affiliation change is entry into active state.

21. (Original) The method of claim 15, wherein said reclustering comprises establishment of a new cluster in said network environment.

22. (Original) The method of claim 15, wherein said reclustering comprises elimination of an existing cluster in said network environment.

23. (Original) The method of claim 15, wherein said reclustering comprises transfer of one or more nodes from a first cluster in said network environment to a second cluster in said network environment.

24. (Currently Amended) A method for communications in a network environment, comprising:

receiving data at a node in said network environment, wherein said node is ~~associated with~~ a member of a cluster in said network environment;

selecting from identification numbers associated with nodes in said network environment an identification number closest in value, in view of a specified polarity, to an identification number associated with said node; and

dispatching said data to a node associated with the selected identification number.

25. (Original) The method of claim 24, wherein said network environment is a peer-to-peer environment.

26. (Currently Amended) The method of claim 24, wherein the identification number associated with the node that received said data and the selected identification number are node identification numbers, and said node associated with the selected identification number is ~~associated with~~ a member of said cluster.

27. (Currently Amended) The method of claim 24, wherein the identification number associated with the node that received said data and the selected identification number are cluster identification numbers, and node associated with the selected identification number is ~~associated with~~ a member of a cluster other than the cluster ~~with~~ of which the node that received said data is ~~associated~~ a member.

28. (Original) The method of claim 27, wherein said node associated with the selected identification number is selected randomly from a plurality of nodes associated with the selected identification number.

29. (Original) The method of claim 26, wherein said data corresponds to an entity index update.

30. (Previously Presented) The method of claim 26, wherein said data corresponds to an entity query.

31. (Original) The method of claim 26, wherein said data corresponds to a node index update.

32. (Original) The method of claim 27, wherein said data corresponds to a node index update.

33. (Original) The method of claim 24, wherein said specified polarity indicates that the selected identification number be higher in value than the identification number associated with the node that received said data.

34. (Original) The method of claim 24, wherein said specified polarity indicates that the selected identification number be lower in value than the identification number associated with the node that received said data.

35. (Currently Amended) A system for cluster management in a network environment, comprising:

a memory having program code stored therein; and  
a processor operatively connected to said memory for carrying out instructions in  
accordance with said stored program code;

wherein said program code, when executed by said processor, causes said  
processor to perform:

performing, at a first node, with respect to one or more ~~associated~~ first clusters in  
said network environment, one or more traffic measurements, wherein the first node is a member  
of said one or more first clusters;

receiving, at the first node from one or more second nodes that are members of  
one or more second clusters in said network environment, one or more traffic measurements  
performed by the one or more second nodes with respect to the one or more second clusters from  
~~one or more nodes associated with one or more other clusters in said network environment~~;

determining, at the first node in accordance with the one or more traffic  
measurements performed at the first node and the one or more traffic measurements performed  
by the one or more second nodes ~~performed traffic measurements and the received traffic~~  
~~measurements~~, one or more reclustering operations to be performed in said network  
environment; and

dispatching, from the first node, data to realize said reclustering.

36. (Original) The system of claim 35, wherein said network environment is a peer-to-peer  
environment.

37. (Original) The system of claim 35, wherein said reclustering operations comprise creation of

a new cluster.

38. (Original) The system of claim 35, wherein said reclustering operations comprise elimination of one of said clusters.

39. (Original) The system of claim 35, wherein said reclustering operations comprise transfer of one or more of said nodes among between one or more of said clusters.

40. (Original) The system of claim 35, wherein said traffic measurements are constantly taken.

41. (Original) The system of claim 35, wherein said traffic measurements are taken in response to a request for said measurements.

42. (Original) The system of claim 41, wherein said measurements are taken for a specified period of time.

43. (Original) The system of claim 35, wherein said traffic measurements comprise measurements corresponding to node index updates.

44. (Original) The system of claim 35, wherein said traffic measurements comprise measurements corresponding to entity index updates.

45. (Original) The system of claim 35, wherein said traffic measurements comprise

measurements corresponding to entity queries.

46. (Previously Presented) The system of claim 35, wherein determining comprises determination of traffic-optimizing cluster size.

47. (Previously Presented) The system of claim 35, wherein a new cluster is created in response to entity index traffic measurements rising above a specified level or entity query traffic measurements falling below a specified level.

48. (Previously Presented) The system of claim 35, wherein one of said clusters is eliminated in response to entity index traffic measurements falling below a specified level or entity query traffic measurements rising above a specified level.

49. (Original) A system for cluster management in a network environment, comprising:

- a memory having program code stored therein; and
- a processor operatively connected to said memory for carrying out instructions in accordance with said stored program code;

wherein said program code, when executed by said processor, causes said processor to perform:

- receiving a request from a node to change affiliation with said network environment;
- determining if the affiliation change would result in an integer-squared number of nodes being affiliated with said environment; and

dispatching data to realize reclustering in said environment in the case where said determining yields an affirmative result.

50. (Original) The system of claim 49, wherein said network environment is a peer-to-peer environment.

51. (Original) The system of claim 49, wherein it is determined if the affiliation change would result in said integer-squared number of nodes being registered in said network environment.

52. (Original) The system of claim 49, wherein it is determined if the affiliation change would result in said integer-squared number of nodes being active in said network environment.

53. (Original) The system of claim 49, wherein the affiliation change is registration.

54. (Original) The system of claim 49, wherein the affiliation change is entry into active state.

55. (Original) The system of claim 49, wherein said reclustering comprises establishment of a new cluster in said network environment.

56. (Original) The system of claim 49, wherein said reclustering comprises elimination of an existing cluster in said network environment.

57. (Original) The system of claim 49, wherein said reclustering comprises transfer of one or

more nodes from a first cluster in said network environment to a second cluster in said network environment.

58. (Currently Amended) A system for communications in a network environment, comprising:  
a memory having program code stored therein; and  
a processor operatively connected to said memory for carrying out instructions in accordance with said stored program code;  
wherein said program code, when executed by said processor, causes said processor to perform:

receiving data at a node in said network environment, wherein said node is ~~associated with~~ a member of a cluster in said network environment;

selecting from identification numbers associated with nodes in said network environment an identification number closest in value, in view of a specified polarity, to an identification number associated with said node; and

dispatching said data to a node associated with the selected identification number.

59. (Original) The system of claim 58, wherein said network environment is a peer-to-peer environment.

60. (Currently Amended) The system of claim 58, wherein the identification number associated with the node that received said data and the selected identification number are node identification numbers, and said node associated with the selected identification number is ~~associated with~~ a member of said cluster.

61. (Currently Amended) The system of claim 58, wherein the identification number associated with the node that received said data and the selected identification number are cluster identification numbers, and node associated with the selected identification number is ~~associated~~ with a member of a cluster other than the cluster ~~with~~ of which the node that received said data is ~~associated~~ a member.

62. (Original) The system of claim 61, wherein said node associated with the selected identification number is selected randomly from a plurality of nodes associated with the selected identification number.

63. (Original) The system of claim 60, wherein said data corresponds to an entity index update.

64. (Previously Presented) The system of claim 60, wherein said data corresponds to an entity query.

65. (Original) The system of claim 60, wherein said data corresponds to a node index update.

66. (Original) The system of claim 61, wherein said data corresponds to a node index update.

67. (Original) The system of claim 58, wherein said specified polarity indicates that the selected identification number be higher in value than the identification number associated with the node that received said data.

68. (Original) The system of claim 58, wherein said specified polarity indicates that the selected identification number be lower in value than the identification number associated with the node that received said data.